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April 13, 2005

William Pfanner
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: San Francisco Electric Reliability Project, Supplement A, 04-AFC-1

To the Dockets Office:

It has come to our attention that the annual average PM_{10} impacts shown in Section 8.1 of Supplement A to the Application for Certification for the SFERP project were overstated in the documents filed on March 24, 2005. The original modeling erroneously reflected operations of three CTGs for 8760 hours per year each, rather than the proposed permit limitation of 12,000 hours per year total or an average of 4,000 hours per year per CTG. As a result, the annual average PM_{10} impacts were over-stated by roughly a factor of two. The result of correcting this error is a reduction in the annual average PM_{10} impacts from 0.2 ug/m^3 to 0.08ug/m^3. Replacement pages containing the revised versions of the tables and figures that reflect the correct, lower annual average PM_{10} impacts are provided in the attached document. For those receiving CD-ROM copies of the Supplement A, please destroy your prior copy. The replacement CD-ROM contains the corrected data.

The modeling files provided on CD with the AFC on March 24 included the erroneous modeling results. With this filing, we are also providing a new set of 5 modeling CDs containing a complete set of corrected modeling files. Please discard the CDs filed with the AFC and place these CDs in the project docket instead.

If you have any questions regarding this filing, please do not hesitate to call.

Sincerely,

Nancy Matthews

Nancy Matthews

enclosures

cc: (w/o CDs)
Karen Kubick, SFPUC
John Carrier, CH2M Hill
Steve DeYoung
Service List

BEFORE THE
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION
OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION	)	Docket No. 04-AFC-1
FOR THE SAN FRANCISCO ELECTRIC	)	
RELIABILITY PROJECT	)	PROOF OF SERVICE
	)	*Revised 11/18/04

I, **Anar Bhimani** declare that on **April 13, 2005,** I deposited copies of the attached **Air Quality Errata for Volume 1 and Volume 2, and copy of letter to BAAQMD transmitting same,** in the United States mail at Sacramento, CA with first class postage thereon, fully prepaid, and addressed to the following:

DOCKET UNIT

Send the original signed document plus 12 copies to the following address:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 01-AFC-17
DOCKET UNIT, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

In addition to the documents sent to the Commission Docket Unit, also send individual copies of all documents to:

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I declare under penalty of perjury that the foregoing is true and correct.

Anar Bhimani

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April 13, 2005

Brian Bateman
Engineering Division
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

Re: Application for Determination of Compliance
San Francisco Energy Reliability Project

Dear Brian:

It has come to our attention that the annual average PM_{10} impacts shown in the Application for Determination of Compliance for the SFERP project were overstated in the documents filed on March 29, 2005. The original modeling erroneously reflected operations of three CTGs for 8760 hours per year each, rather than the proposed permit limitation of 12,000 hours per year total or an average of 4,000 hours per year per CTG. As a result, the annual average PM_{10} impacts were over-stated by roughly a factor of two. The result of correcting this error is a reduction in the annual average PM_{10} impacts from 0.2 ug/m^3 to 0.08ug/m^3. Replacement pages containing the revised versions of the tables and figures that reflect the correct, lower annual average PM_{10} impacts are provided in the attached document.

The modeling files provided on CD with the application on March 29 included the erroneous modeling results. With this filing, we are also providing two modeling CDs containing a complete set of corrected modeling files. Please discard the CDs filed with the application and place these CDs in the project file instead.

If you have any questions regarding this filing or regarding the proposed project in general, please do not hesitate to call.

Sincerely,

Nancy Matthews

Nancy Matthews

enclosures

cc: (w/o CDs)
Karen Kubick, SFPUC
Ralph Hollenbacher, SFPUC
Russell Stepp, SFPUC
Steve DeYoung
John Carrier, CH2M Hill
Jeanne M. Solé, Office of the City Attorney
Bill Pfanner, CEC Project Manager

AIR QUALITY ERRATA

SUPPLEMENT A—VOLUME 1

Attached are replacement pages for Supplement A-Volume 1.

Please remove pages 8.1-39 through 8.1-48 in the Supplement and replace them with the attached pages.

Changes to the original text are shown in track changes mode. The letter "R" has been added to the table number of revised tables to indicate that the table has been revised. Also, pages where the text has been changed have a revised date in the footer.

ISCST3 is not based on the latest model ISCST3 update, this modeling analysis does not include any features that were affected by recent model updates.

ISC3_OLM uses hourly ozone data to perform ozone-limiting calculations on individual plumes on an hour-by-hour basis. In accordance with guidance provided by the BAAQMD staff for similar projects, the concurrent ozone data collected at the nearest monitoring station to the SFERC, on Arkansas Street, were used for this analysis. Annual NO_x impacts during construction were modeled using ISCST3. NO_x impacts were converted to NO_2 using the USEPA-guidance Ambient Ratio Method and the nationwide default conversion rate of 0.75.

Turbine Commissioning. There are several high emissions scenarios possible during commissioning. The first is the period prior to SCR system and oxidation catalyst installation, when the combustor is being tuned. Under this scenario, NO_x emissions would be high because the NO_x emissions control system would not be functioning and because the combustor would not be tuned for optimum performance. CO emissions would also be high because combustor performance would not be optimized and the CO emissions control system would not be functioning. The second high emissions scenario may occur when the combustor has been tuned but the SCR and oxidation catalyst installation is not complete, and other parts of the turbine operating system are being checked out. Since the combustor would be tuned but the control system installation would not be complete, NO_x and CO levels would again be high. Commissioning activities and expected emissions are discussed in more detail below.

Preconstruction Monitoring. To ensure that the impacts from the SFERC combustion turbines will not cause or contribute to a violation of an ambient air quality standard or an exceedance of a PSD increment, an analysis of the existing air quality in the project area is necessary. If a source is subject to PSD review, BAAQMD rules require preconstruction ambient air quality monitoring data for the purposes of establishing background pollutant concentrations in the impact area (Regulation 2-2-414.3). However, a facility may be exempted from this requirement if the predicted air quality impacts of the facility do not exceed the de minimis levels listed in Table 8.1-21. As the SFERC is not subject to PSD review, the preconstruction monitoring requirements are not applicable to the project.

TABLE 8.1-21
BAAQMD PSD Preconstruction Monitoring Exemption Levels

Pollutant	Averaging Period	De minimis Level
CO	8-hr average	575 $\mu g/m^3$
PM_{10}	24-hr average	10 $\mu g/m^3$
NO_2	annual average	14 $\mu g/m^3$
SO_2	24-hr average	13 $\mu g/m^3$

With the BAAQMD's approval, a facility may rely on air quality monitoring data collected at BAAQMD monitoring stations to satisfy the requirement for preconstruction monitoring. In such a case, in accordance with Section 2.4 of the USEPA PSD guideline, the last three years of ambient monitoring data may be used if they are representative of the area's air quality where the maximum impacts occur due to the proposed source.

The background data need not be collected on site, as long as the data are representative of the air quality in the subject area (40 CFR 51, Appendix W, Section 9.2). Three criteria are applied in determining whether the background data are representative: (1) location, (2) data quality, and (3) data currentness (USEPA, 1987). These criteria are defined as follows:

- **Location:** The measured data must be representative of the areas where the maximum concentration occurs for the proposed stationary source, existing sources, and a combination of the proposed and existing sources.
- **Data quality:** Data must be collected and equipment must be operated in accordance with the requirements of 40 CFR Part 58, Appendices A and B, and PSD monitoring guidance.
- **Currentness:** The data are current if they have been collected within the preceding three years and they are representative of existing conditions.

Although the SFERP is not subject to PSD review and thus not required to follow this guidance, all of the data used in this analysis meet the requirements of Appendices A and B of 40 CFR Part 58, and thus all meet the criterion for data quality. All of the data have been collected within the preceding three years, and thus all meet the criterion for currentness.

Ambient NO_2, CO, SO_2, PM_{10} and $PM_{2.5}$ data are collected at the Arkansas Street monitoring station. This monitoring station is located less than 2 miles northwest of the project site. Ambient NO_2, CO, SO_2 and $PM_{2.5}$ data are also being collected at a monitoring station in Hunters Point, a little over 1 mile south of the project site. The ambient pollution levels monitored at the Arkansas Street and Hunters Point monitoring stations reflect concentrations in the vicinity of the project, and thus meet the criterion for location. CO levels are affected mainly by vehicle traffic, so CO concentrations monitored at both urbanized locations are expected to conservatively represent CO levels in the project area. There are no local sources of SO_2 in the vicinity of either monitoring station or the project site that would be expected to affect monitored concentrations. Therefore, both stations provide representative background data for assessing the SO_2 impacts of the project, and thus meet the location criterion.

Results of the Ambient Air Quality Modeling Analyses. The maximum facility impacts calculated from the ISCST3/CTSCREEN and fumigation modeling analyses described previously are summarized in Table 8.1-22R. The highest modeled impacts are expected to occur under startup and shoreline fumigation conditions.

Even if the project were subject to PSD review, preconstruction monitoring would not be required because the maximum ambient impacts do not exceed de minimis levels, as shown in Table 8.1-23.

TABLE 8.1-22R
Results of the Ambient Air Quality Modeling Analysis

Pollutant	Averaging Time	Modeled Concentration (μg/m3)			
		Normal Operation	Startup	Inversion Breakup Fumigation	Shoreline Fumigation
NO_2	1-hour	8.3	111.3	1.6	11.0
	Annual	0.1	[a]	—[c]	—[c]
SO_2	1-hour	0.8	[b]	0.2	1.1
	3-hour	0.6	[b]	0.2	1.0
	24-hour	0.1	[b]	0.05	0.1
	Annual	0.01	[b]	—[c]	—[c]
CO	1-hour	8.1	27.8	1.6	10.7
	8-hour	6.3	[a]	0.9	3.3
$PM_{2.5}/PM_{10}$ (including cooling tower)[d]	24-hour	1.2	[b]	0.5	0.9
	Annual	~~0.2~~0.08	[b]	—[c]	—[c]

Notes:

[a] Not applicable, because startup emissions are included in the 8-hour and longer-term ("Normal Operation") modeling.

[b] Not applicable, because emissions are not elevated above normal levels during startup.

[c] Not applicable, because inversion breakup and shoreline fumigation are short-term phenomena and as such are evaluated only for short-term averaging periods.

[d] Cooling tower not included in fumigation modeling.

TABLE 8.1-23
Evaluation of Preconstruction Monitoring Requirements

Pollutant	Averaging Time	Exemption Concentration ($\mu g/m^3$)	Maximum Modeled Concentration ($\mu g/m^3$)	Exceed Monitoring Threshold?
NO_x	annual	14	0.1	No
SO_2	24-hr	13	0.1	No
CO	8-hr	575	6.3	No
PM_{10}	24-hr	10	1.2	No

Impacts During Turbine Commissioning. As discussed previously, NO_2 and CO impacts could be higher during commissioning than under other operating conditions already evaluated. The commissioning period for the project is comprised of several equipment tests. These tests and the associated NO_x and CO emissions are briefly summarized below. The emissions calculations are shown in more detail in Appendix 8.1B, Table 8.1B-7.

- **Full Speed No Load Tests (FSNL)**—The tests include a test of the combustion turbine ignition system, a test to ensure that the CTG is synchronized with its electric generator, and a test of the CTG's overspeed system. During the tests, the heat input to the CTG will be approximately 100 MMBtu/hr or 20 percent of the maximum heat input rating. Worst-case NO_x emission concentrations are expected to be 100 ppm at 15-percent oxygen, or 35.3 lb/hr at 97 MMbtu/hr. Total operating time for these tests is expected to be about 4 hours per unit (12 hours total), resulting in maximum total NO_x emissions of 424 pounds. Maximum CO emissions are assumed to be 120 ppm at 15-percent oxygen, or 25.7 lb/hr at 97 MMbtu/hr, for a total of 308 pounds CO for the period.

- **Minimum Load Tests**—These tests will occur over several days. During this testing period the CTG combustor water injection rates will be tuned to minimize emissions and steam line checks will be performed. This test period will allow for complete combustion path warm-up, required for removing all debris that could potentially damage the SCR and CO catalysts. During the tests, the heat input to the combustion turbine will be approximately 100 MMBtu/hr or 20 percent of the maximum heat input rating. The average NO_x emission concentration for the period is assumed be 42 ppm at 15-percent oxygen (due to water injection control) at a heat input of 97 MMBtu/hr, or 15 lb/hr NO_x. Total testing is estimated to last approximately 20 hours per unit, or 60 hours, for a total of 900 pounds of NO_x. The worst case CO emission rate is assumed to be equivalent to 17 times the controlled emission rate (14.6 lb/hr), for a total of 876 pounds CO for the period.
- **Full Speed, No Load Tests (SCR Not Operational)**—These tests will occur over approximately a 4-day period. By the beginning of this test period, the water injection at the CTG combustor will be completely tuned. The SCR and CO catalyst will be installed during this testing period, but no ammonia will be injected. During the tests, the heat input to the CTG will be approximately 100 MMBtu/hr or 20 percent of the maximum heat input rating. Testing and commissioning of the spray water (SPRINT) power augmentation system on the CTG combustor will also take place during this second FSNL test. The average NO_x emission concentration for the period is assumed be 30 ppm at 15-percent oxygen (water injection control) at 100 MMBtu/hr, or 35.3 lb/hr NO_x. Total testing is estimated to last up to 24 hours for each CTG, for a total of approximately 2,550 pounds of NO_x from all three units. Again, the worst-case CO emission rate is assumed to be equivalent to 17 times the controlled emissions (25.7 lb/hr), for a total of approximately 1,850 pounds of CO for the period.
- **Multiple Load Tests (SCR and Oxidation Catalyst Fully Operational)**—These tests will occur over approximately a 13-day period. By the beginning of this test period the control systems will be completely tuned and achieving NO_x and CO control at design levels. During the tests, the heat input to each combustion turbine will be approximately 487.3 MMBtu/hr or 100 percent of the maximum heat input rating.

Total heat rate will vary between about 10,000 Btu/kWh and 14,000 Btu/kWh (HHV) during commissioning activities. Average heat rate for the entire commissioning period is expected to be about 10,000 Btu/kWh to 12,000 Btu/kWh (HHV).

The maximum modeled NO_2 and CO impact during commissioning will occur under the turbine operating conditions that are least favorable for dispersion. As shown in the unit impacts analysis, these conditions are expected to occur under part-load, high-temperature conditions (Case 6).

The unit impact modeling results for three turbines emitting 1 g/s each under Case 6 (see Appendix 8.1B, Table 8.1B-3) can be scaled using a NO_x emission rate of 4.45 g/s (35.3 lb/hr) to determine that the maximum modeled 1-hour NO_2 impact during commissioning of three turbines is not expected to exceed approximately 98 μg/m³. Using the background NO_2 concentration of 141 μg/m³, the total impact will not exceed 239 μg/m³, which is well below the state one-hour NO_2 standard of 470 μg/m³. The turbine screening results can also be scaled to determine that maximum 1-hour CO impacts during commissioning of three turbines are not expected to exceed 72 μg/m³. Combined with the background concentration of 5,000 μg/m³, the total impact will not exceed 5,072 μg/m³, which is well below the state 1-hour CO standard of 23,000 μg/m³.

No additional mitigation will be necessary during the commissioning period. The SFERP air permit and conditions of certification will require that all emissions during commissioning must accrue toward the rolling 12-month emissions limits that will be included in the permit. As offsets and mitigation will be provided for permitted annual emissions, there will be no excess unmitigated emissions from the project during commissioning.

Ambient Air Quality Impacts. To determine a project's air quality impacts, the modeled concentrations are added to the maximum background ambient air concentrations and then compared to the applicable ambient air quality standards. The modeled concentrations have already been presented in earlier tables. The maximum background ambient concentrations are listed in the following text and tables. A detailed discussion of why the data collected at these stations are representative of ambient concentrations in the vicinity of the project was provided in preceding discussions.

Table 8.1-24 presents the maximum concentrations of NO_X, CO, SO_2, PM_{10} and $PM_{2.5}$ recorded between 2001 through 2003 from the Arkansas Street monitoring station,[1] and the available data from the Hunters Point monitoring station.

TABLE 8.1-24
Maximum Background Concentrations, 2001-2004 (μg/m³)

Pollutant	Averaging Period	Arkansas Street Monitoring Station			Hunters Point Monitoring Station 2004[a]
		2001	2002	2003	
NO_2	1-hour	137	141	135	88
	Annual	36	36	34	n/a
SO_2	1-hour	65	138	62	78
	3-hour	44	52	44	70
	24-hour	21.0	18.4	18.4	28.9
	Annual	5.3	5.3	5.3	n/a
CO	1-hour	5,000	4,375	4,500	1,125
	8-hour	3,644	2,856	3,156	778
PM_{10}	24-hour	67	74	51	36
	Annual	26.3	24.7	22	22
$PM_{2.5}$	24-hour	51	58	33	n/a
	Annual	11.5	13.1	10.1	

Note:

[a] Partial year (June through December).

[1] Complete 2004 monitoring results for the Arkansas Street are not yet available.

Maximum ground-level impacts due to operation of the SFERP are shown together with the ambient air quality standards in Table 8.1-25R. Using the conservative assumptions described earlier, the results indicate that the SFERP will not cause or contribute to violations of any state or federal air quality standards, with the exception of the state PM_{10} and state and federal $PM_{2.5}$ standards. For these pollutants, existing concentrations already exceed the state standards.

TABLE 8.1-25R
Modeled Maximum Impacts from Facility

Pollutant	Averaging Time	Maximum Facility Impact (µg/m³)	Background (µg/m³)	Total Impact (µg/m³)	State Standard (µg/m³)	Federal Standard (µg/m³)
NO_2	1-hour	111.3[a]	141	252	470	–
	Annual	0.1	36	36	–	100
SO_2	1-hour	1.1	138	139	655	–
	3-hour	1.0	70	71	–	1,300
	24-hour	0.1	29	29	105	365
	Annual	0.01	5.3	5.3	–	80
CO	1-hour	27.8	5,000	5,028	23,000	40,000
	8-hour	6.3	3,644	3,650	10,000	10,000
PM_{10}	24-hour	1.2	74	75	50	150
	Annual	~~0.2~~0.08	26.3	~~26.5~~26.4	20	50
$PM_{2.5}$	24-Hour	1.2	58	59	–	65
	Annual	~~0.2~~0.08	13.1	~~13.3~~13.2	12	15

[a] Maximum 1-hour NO_2 impact shown occurs only during simultaneous startup of three turbines. Maximum impact during routine turbine operation will be approximately 8.3 µg/m³.

PSD Increment Consumption. The Prevention of Significant Deterioration (PSD) program was established to allow emission increases (increments of consumption) that do not result in significant deterioration of ambient air quality in areas where criteria pollutants have not exceeded the National Ambient Air Quality Standards (NAAQS). For the purposes of determining applicability of the PSD program requirements, the following regulatory procedure is used:

- SFERP facility-wide emissions are compared with regulatory significance thresholds to determine whether the facility is major and thus may be subject to PSD. If the facility emissions exceed these thresholds, it is a major facility. The comparison in Table 8.1-26 indicates that the SFERP will not be a major facility and thus is not subject to PSD.

- If an ambient impact analysis is required, the analysis is first used to determine if the impact levels are significant. The determination of significance is based on whether the impacts exceed established significance levels (BAAQMD Rule 2.2-233) shown in Table 8.1-27. If the significance levels are not exceeded, no further analysis is required.

- If the significance levels are exceeded, an analysis is required to demonstrate that the allowable increments will not be exceeded, on a pollutant-specific basis. Increments are the maximum increases in concentration that are allowed to occur above the baseline concentration. These PSD increments are also shown in Table 8.1-27.

Table 8.1-26 shows that the proposed project will not be a major stationary source and will not be subject to PSD review because facility emissions of all pollutants are below the 100-tpy major facility and the PSD significance thresholds.

TABLE 8.1-26
PSD Significant Emissions Levels

Pollutant	Facility Emissions (tpy)	PSD Threshold (tpy)	Significant?
NO_X	39.8	250	No
SO_2	2.7	250	No
POC	7.7	250	No
CO	27.9	250	No
PM_{10}[a]	18.2	250	No

[a] PM_{10} emissions shown include cooling tower.

TABLE 8.1-27
BAAQMD PSD Levels of Significance

Pollutant	Averaging Time	Significant Impact Levels	Maximum Allowable Increments
NO_2	1-Hour	19 $\mu g/m^3$	N/A[a]
	Annual	1 $\mu g/m^3$	25 $\mu g/m^3$
SO_2	3-hour	25 $\mu g/m^3$	512 $\mu g/m^3$
	24-Hour	5$\mu g/m^3$	91 $\mu g/m^3$
	Annual	1 $\mu g/m^3$	20 $\mu g/m^3$
CO	1-Hour	2,000 $\mu g/m^3$	N/A
	8-Hour	500 $\mu g/m^3$	N/A
PM_{10}	24-Hour	5 $\mu g/m^3$	30 $\mu g/m^3$
	Annual	1 $\mu g/m^3$	17 $\mu g/m^3$

[a] The significance level for 1-hour average NO_2 is a BAAQMD level only; there is no corresponding federal significance level.

The maximum modeled impacts from the SFERP facility are compared with the significance levels in Table 8.1-28R. These comparisons show that the proposed project exceeds only the BAAQMD 1-hour average NO_2 significance level, and only during startup of three turbines simultaneously. During routine plant operations, maximum one-hour NO_2 concentrations will be below the BAAQMD significance threshold. As discussed previously, however, the project emissions are below levels that would trigger PSD review either by USEPA or by the BAAQMD, so no further analysis of modeled impacts is required.

TABLE 8.1-28R
Comparison of Maximum Modeled Impacts and PSD Significance Thresholds

Pollutant	Averaging Time	Maximum Modeled Impacts (μg/m3)	Significance Threshold (μg/m3)	Significant?
NO_2	1-Hour	111.3	19	yes
	Annual	0.1	1	no
SO_2	3-Hour	1.0	25	no
	24-Hour	0.1	5	no
	Annual	0.01	1	no

TABLE 8.1-28R
Comparison of Maximum Modeled Impacts and PSD Significance Thresholds

Pollutant	Averaging Time	Maximum Modeled Impacts (µg/m3)	Significance Threshold (µg/m3)	Significant?
CO	1-Hour	27.8	2,000	no
	8-Hour	6.3	500	no
PM_{10}	24-Hour	1.2	5	no
	Annual	~~0.2~~0.08	1	no

[a] NO_2 impact shown occurs only during the startup of three turbines simultaneously. Under typical operating conditions, 1-hour average NO_2 concentration will be 8.3 $\mu g/m^3$.

8.1.5.5 Screening Health Risk Assessment

The screening health risk assessment (SHRA) was conducted to determine expected impacts on public health of the noncriteria pollutant emissions from the facility. The SHRA was conducted in accordance with the California Office of Environmental Health Hazard Assessment (OEHHA) Air Toxics "Hot Spots" Program Risk Assessment Guidelines (June 2002) and the BAAQMD "Risk Management Procedure" Policy (May 1991). The SHRA estimated the offsite cancer risk to the maximally exposed individual (MEI), as well as indicated any adverse effects of non-carcinogenic compound emissions. The CARB/OEHHA HARP computer program was used to evaluate multipathway exposure to toxic substances. Because of the conservatism (overprediction) built into the established risk analysis methodology, the actual risks will be lower than those estimated.

A health risk assessment requires the following information:

- Carcinogenic potency values for any carcinogenic substances that may be emitted
- Noncancer Reference Exposure levels (RELs) for determining non-carcinogenic health impacts
- One-hour and annual average emission rates for each substance of concern
- The modeled maximum offsite concentration of each of the pollutants emitted

The SHRA uses carcinogenic potency factors specified by the California OEHHA. All of the pollutant cancer risks are assumed to be additive.

An evaluation of the potential noncancer health effects from long-term (chronic) and short-term (acute) exposures has also been included in the SHRA. Many of the carcinogenic compounds are also associated with noncancer health effects and are therefore included in the determination of both cancer and noncancer effects. RELs are used as indicators of potential adverse health effects. RELs are generally based on the most sensitive adverse health effect reported and are designed to protect the most sensitive individuals. However, exceeding the REL does not automatically indicate a health impact. The OEHHA reference exposure levels were used to determine any adverse health effects from noncarcinogenic compounds. A hazard index for each noncancer pollutant is then determined by the ratio of the pollutant annual average concentration to its respective REL for a chronic evaluation. The individual indices are summed to determine the overall hazard index for the project.

Because noncancer compounds do not target the same system or organ, this sum is considered conservative. The same procedure is used for the acute evaluation.

The SFERP SHRA results are compared with the established risk management procedures for the determination of acceptability. The established risk management criteria provides that if the potential increased cancer risk is less than one in a million, the facility risk is considered not significant.

The SHRA includes the noncriteria pollutants listed in Table 8.1-22R. The receptor grid described earlier for criteria pollutant modeling was used for the SHRA. The SHRA results for the SFERP are presented in Table 8.1-29, and the detailed calculations are provided in Appendix 8.1C. The locations of the maximum modeled risks are shown in Figure 8.1C-1.

TABLE 8.1-29
Screening Health Risk Assessment Results

Cancer Risk to Maximally Exposed Individual[a]	0.046 in one million
Cancer Risk at Nearest Residence[b]	0.0008 in one million
Cancer Risk at Nearest Workplace	0.0001 in one million
Acute Inhalation Hazard Index	0.03
Chronic Inhalation Hazard Index	0.002

[a] Value shown reflects high-end point estimate. 70-year cancer risk estimates range from 0.022 in one million to 0.046 in one million.

[b] Value shown reflects high-end point estimate.

The screening HRA results indicate that the acute and chronic hazard indices are well below 1.0, so, pursuant to established risk management criteria, are not significant. The cancer risk to a maximally exposed individual is 0.05 in one million, well below the one in one million level. The screening HRA results indicate that, overall, the SFERP project will not pose a significant health risk at any location.

8.1.5.6 Construction Impacts Analysis

Emissions due to the construction phase of the project have been estimated, including an assessment of emissions from vehicle and equipment exhaust and the fugitive dust generated from material handling. A dispersion modeling analysis was conducted based on these emissions. A detailed analysis of the emissions and ambient impacts is included in Appendix 8.1D. The results of the analysis indicate that the maximum construction impacts will be below the state and federal standards for all the criteria pollutants emitted. The best available emission control techniques will be used, including dust reduction measures set forth in the Environmental Code, Chapter 10 and in Department of Public Works Order 171,378 during construction. The SFERP construction site impacts are not unusual in comparison to most construction sites; construction sites that use good dust-suppression techniques and low-emitting vehicles typically do not cause violations of air quality standards.

Combustion Diesel PM_{10} emission impacts have also been evaluated. This risk screening analysis is also included in Appendix 8.1D.

8.1.6 Consistency with Laws, Ordinances, Regulations and Standards

8.1.6.1 Consistency with Federal Requirements

The BAAQMD has been delegated authority by the USEPA to implement and enforce most federal requirements that may be applicable to the SFERP, including the new source performance standards and new source review for nonattainment pollutants. Compliance with the BAAQMD regulations ensures compliance and consistency with the corresponding federal requirements as well. The SFERP will also be required to comply with the Federal Acid Rain requirements (Title IV). Since the BAAQMD has received delegation for implementing Title IV through its Title V permit program, the SFERP will secure a BAAQMD Title V permit that imposes the necessary requirements for compliance with the Title IV Acid Rain provisions.

8.1.6.2 Consistency with State Requirements

State law sets up local air pollution control districts and air quality management districts with the principal responsibility for regulating emissions from stationary sources. As discussed previously, the SFERP is under the local jurisdiction of the BAAQMD, and compliance with BAAQMD regulations will ensure compliance with state air quality requirements.

8.1.6.3 Consistency with Local Requirements: Bay Area Air Quality Management District

The BAAQMD has been delegated responsibility for implementing local, state, and federal air quality regulations in portions of the nine counties surrounding San Francisco Bay. The SFERP project is subject to BAAQMD regulations that apply to new sources of emissions, to the prohibitory regulations that specify emission standards for individual equipment categories, and to the requirements for evaluation of impacts from toxic air pollutants. The following sections include the evaluation of facility compliance with the applicable BAAQMD requirements.

Under the regulations that govern new sources of emissions, the SFERP is required to secure a preconstruction Determination of Compliance from the BAAQMD (Regulation 2, Rule 3), as well as demonstrate continued compliance with regulatory limits when the facility becomes operational. The preconstruction review includes demonstrating that the combustion turbines will use best available control technology (BACT) and will provide any necessary emission offsets.

Applicable BACT levels are shown in Table 8.1-30, along with anticipated potential facility emissions. BAAQMD Rule 2-2-301 requires the SFERP to apply BACT to any source that has an increase in emissions of NO_x, POC, SO_x, CO, and PM_{10} (criteria pollutants) and that has a potential to emit in excess of 10.0 pounds per highest day. Rule 2.2-301.2 imposes BACT for emissions of lead, asbestos, beryllium, mercury, fluorides, sulfuric acid mist, hydrogen sulfide, total reduced sulfur, and reduced sulfur compounds when emitted in excess of specified amounts. The SFERP facility will not emit any of these latter pollutants in detectable quantities; therefore, Rule 2-2-301.2 is not applicable to the proposed project. As shown in the table, BACT is required for NO_x, POC, SO_2, CO, and PM_{10}. The calculation of facility emissions was discussed in AFC Section 8.1.5.1.1.

AIR QUALITY ERRATA

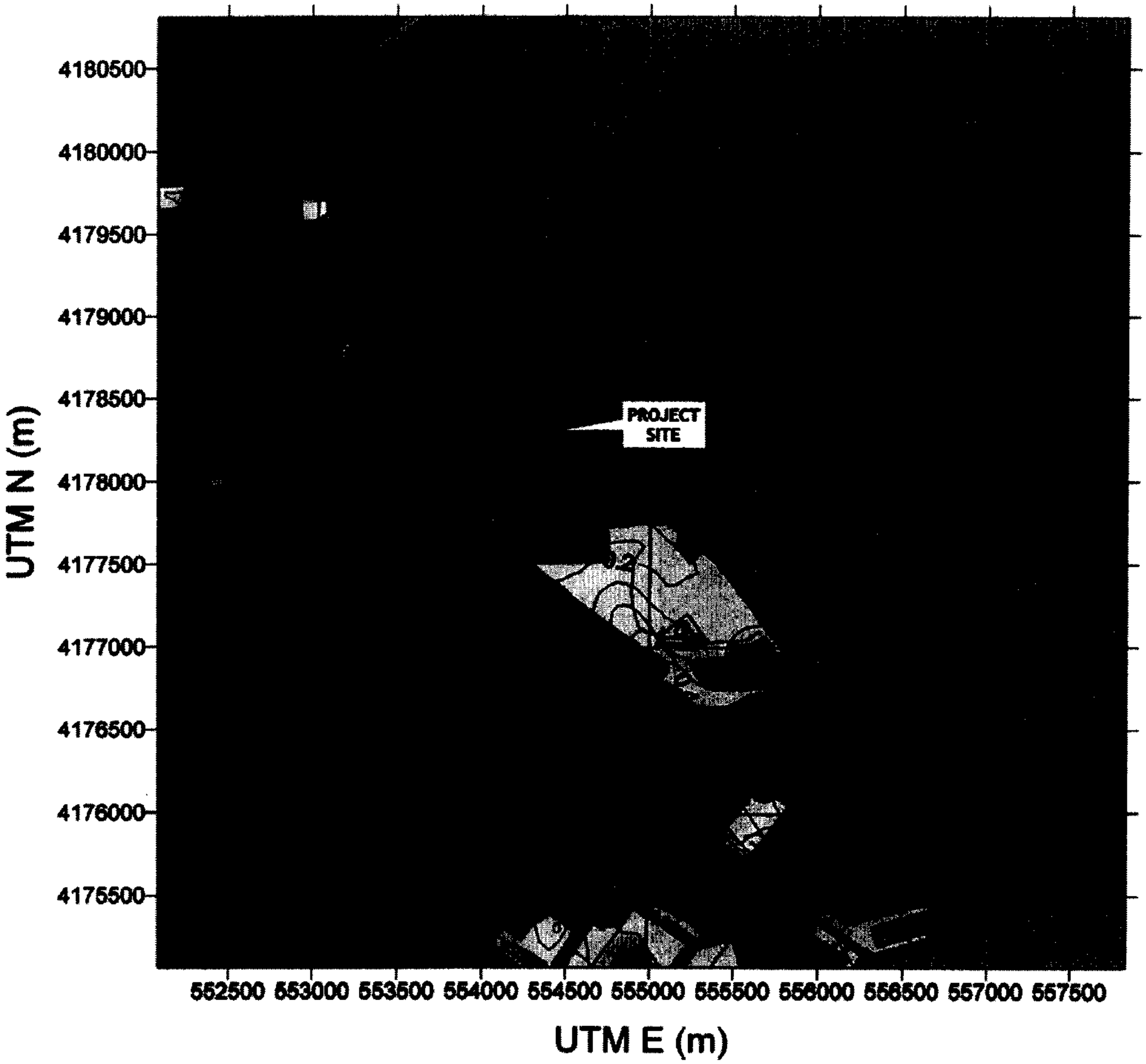
SUPPLEMENT A—VOLUME 2

Attached are replacement pages for Supplement A-Volume 2, the Air Quality Appendices.

1) **In Appendix 8.1B, please replace page B-17 and B-18 with the attached page.**

2) **In Appendix 8.1F, please replace pages F-3 through F-10 with the attached pages.**

Figure 8.1B-3
Maximum 24-Hour Average PM_{10} Impacts During Project Operation

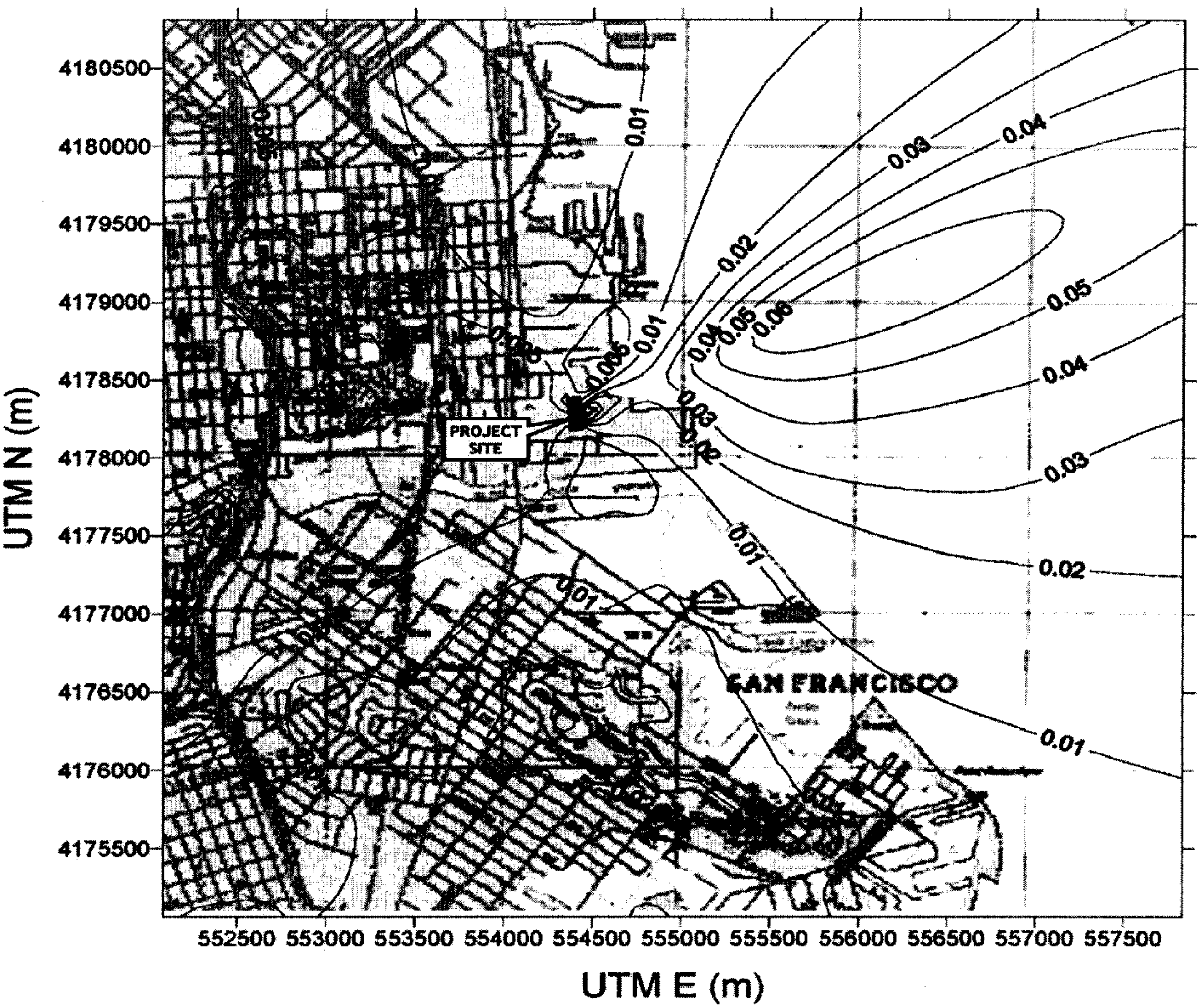


Units are $\mu g/m^3$.

The highest concentration of PM_{10} from the project under any conditions will be 1.2 $\mu g/m^3$. The concentration considered by the US EPA to be significant is 5 $\mu g/m^3$. Therefore, the highest concentration of PM_{10} from this project is less than ¼ of the level considered by EPA to be significant.

Figure 8.1B-4 ***Revised 4/05***

Annual Average PM_{10} Impact During Project Operation



Note: Units are $\mu g/m^3$.

The highest concentration of PM_{10} under any conditions will be ~~0.2~~ _0.08_ $\mu g/m^3$. The concentration considered by the US EPA to be significant is 1 $\mu g/m^3$. Therefore, the highest concentration of PM_{10} from this project is less than ~~one-fifth~~ _one-tenth_ of the level considered by EPA to be significant.

Table 8.1F-2
Comparison of SFERP Emissions to Regional Precursor Emissions in 2005: Annual Basis*

	San Francisco County		BAAQMD
Ozone Precursors – Annual Basis			
Total Ozone Precursors, tons/year	36,208		342,735
Total SFERP Ozone Precursor Emissions, tons/year		47.5	
SFERP Ozone Precursor Emissions as Percent of Regional Total	0.13%		0.01%
SFERP Offsets, tons/year		47.5	
SFERP Ozone Precursor Emissions after offsets, tons/year		0	
PM_{10} Precursors – Annual Basis			
Total PM_{10} Precursors, tons/year	43,362		444,570
Total SFERP PM_{10} Precursor Emissions, tons/year		68.4	
SFERP PM_{10} Precursor Emissions as Percent of Regional Total	0.16%		0.02%
SFERP Offsets, tons/year		47.5	
SFERP PM_{10} Precursor Emissions after offsets, tons/year	0.05%		<0.01%

Note: * County and BAAQMD emissions calculated as 365 times daily emissions.

Table 8.1F-3 ***Revised 4/05***
Maximum Modeled Project Impacts and PSD Significance Thresholds

Pollutant	Averaging Prd	Max Facility Impact, ug/m^3	PSD Significance Threshold, ug/m^3
NOx	1-hour	8.3	19[a]
	annual	0.1	1.0
SO_2	3-hour	1.0	25
	24-hour	0.1	5
	annual	0.006	1.0
CO	1-hour	27.8	2000
	8-hour	6.3	500
PM_{10}[b]	24-hour	1.2	5
	annual	~~0.2~~ ***0.08***	1.0

Notes:
a. BAAQMD significance threshold only.
b. Includes cooling tower.

As shown in the table, SFERP impacts are well below the significance thresholds. As project impacts are not significant as that term is defined in federal air quality modeling guidelines, no significant cumulative impacts are expected to occur. At present, there are no PSD significance thresholds for $PM_{2.5}$.

The only pollutants for which SFERP could be considered to have the potential for significant impacts are NOx and PM_{10}, because the BAAQMD is currently classified as a nonattainment area with respect to state air quality standards for both ozone (for which NOx is a precursor) and PM_{10}, and for the new national 8-hour ozone standard.[2]

To evaluate potential cumulative impacts of SFERP in combination with other projects in the area, we requested from the BAAQMD staff information regarding projects in San Francisco County for which permits to construct have been issued but had not yet begun operation. The list provided by the District staff included 25 facilities. As discussed in the cumulative impacts protocol, projects for which the emissions changes are smaller than 5 tons per year are assumed to be *de minimis* and are not included in the dispersion modeling analysis. Therefore only three projects, with permitted NOx emissions increases of 16.2, 18.9 and 7.1 tons per year, respectively, are included in the cumulative impacts analysis. However, two additional operating facilities, PG&E Hunters Point and Mirant Potrero power plants, were also considered in the dispersion modeling analysis to assess potential localized cumulative air quality impacts for NO_2 and PM_{10}.

Three different modeling analyses were performed to evaluate various future Hunters Point and Potrero operating scenarios. Maximum future emissions from SFERP and the three new facilities were modeled for each scenario. As Hunters Point and Potrero historical emissions are reflected in ambient background concentrations, future operating scenarios evaluate differences in NOx and PM_{10} emissions at the power plants relative to historical levels.

- Maximum future emissions: Future generation at Hunters Point and Potrero would be increased to the maximum levels allowed under existing permits and equipment ratings. Future NOx emissions from Hunters Point Unit 4 and Potrero Unit 3 would be controlled to comply with BAAQMD regulatory requirements, so NOx emissions from these units are modeled as reductions. The difference between average historical and maximum future NOx and PM_{10} emissions from Hunters Point Units 1 and 4 and Potrero Units 3, 4, 5 and 6 are modeled as increases.

- Hunters Point and Potrero operating at historic levels: Future generation at Hunters Point and Potrero would remain at historical levels; however, future NOx emissions from Hunters Point Unit 4 and Potrero Unit 3 would be lower to comply with BAAQMD regulatory requirements. The difference between average historical and projected future NOx emissions from the boilers are treated as reductions. There is no change in PM_{10} emissions.

- Potrero and Hunters Point shut down: Average historical NOx and PM_{10} emissions from all units are modeled as reductions.

Under any reasonably foreseeable scenario, Hunters Point will be shut down. The City does not expect that the Hunters Point power plant will continue to operate beyond 2007. In addition, as described in section 3, Purpose and Need, and section 4, Environmental Justice, the SFERP, in combination with certain additional projects, will provide for the termination of the RMR Agreement for units at the Potrero power plant. The removal of the RMR Agreement from units at the Potrero Power Plant would eliminate an important

[2] The Bay Area is designated as an attainment area for the national 1-hour average ozone standard and the national PM_{10} air quality standards. The District is unclassified for the national $PM_{2.5}$ air quality standards.

source of revenue to Mirant from continued operation of the units and would allow the owner, Mirant Potrero LLC, to shut down the units.

All three future scenarios assume that Potrero Unit 7 will not be built. The Applicant does not believe it is reasonably foreseeable that Potrero Unit 7 will be constructed and operated for the following reasons:

1. The proponent of Potrero Unit 7, Mirant, is in bankruptcy proceedings and the Potrero Unit 7 licensing proceeding has been suspended since November 13, 2003; and
2. It is formal City policy to oppose the construction of Potrero Unit 7.

Accordingly, the City considers the construction of Potrero Unit 7 to be highly unlikely.

The results of the cumulative impact modeling analysis are summarized in the tables below. These results show that the maximum modeled NO_2 and PM_{10} impacts of SFERP are much smaller than the maximum modeled impacts of the other cumulative impact sources. These other sources, which are assumed to be backup Diesel engine generators, are expected to have very high but very localized one-hour and annual average NO_2 impacts. Because their impacts are localized, they do not overlap with impacts from SFERP, Potrero or Hunters Point. Modeled impacts from SFERP and the three other cumulative impact sources are shown in Figures 8.1F-1 through 8.1F-4. The available models do not correctly calculate the negative emission changes (reductions). The presence of the negative emission rates in each case prevents us from including the Potrero and Hunters Point units in the isopleths, although the results for these units are presented in the tables.

The overall reductions from the shutdown of the existing power plants are much larger than the maximum increases in modeled ambient concentrations from the new project. Nonetheless, the modeled impacts in particular locations do not directly overlap and thus do not fully cancel one another out. Because of the relative locations of the Potrero power plant and the SFERP, the Potrero modeled impacts partially overlap with the SFERP modeled impacts. However, the Hunters Point power plant is far enough away that its modeled impacts do not coincide with the maximum impact from the SFERP. If generation at Potrero power plant remains at historical levels, the modeling shows that once the power plant boiler is retrofitted to meet the limitations of the District power plant NOx rule the reductions in maximum modeled NO_2 impacts from this unit will offset some of the localized modeled NO_2 increases from the proposed project. If generation at Potrero is increased to the maximum levels allowable under existing permits, the modeling shows that there will be localized increases in NO_2 and PM_{10} concentrations due to the increased operation. If the existing power plants are shut down, the modeling shows that localized reductions in ambient NO_2 and PM_{10} impacts would directly offset some of the localized impacts of the SFERP.

In summary, the modeling shows that the SFERP is not expected to contribute significantly to cumulative localized NO_2 or PM_{10} ambient impacts. Nonetheless, there will be PM_{10} impacts from the SFERP in both Potrero and Bayview/Hunters Point. To address these concerns, the City is developing, with community input, a PM_{10} mitigation/community benefits package. The City will target the mitigation to the areas affected by the impacts from the project.

Table 8.1F-4 ***Revised 4/05***

Cumulative Air Quality Impacts: Scenario A (Potrero and Hunters Point at Historical Generating Levels with Required NOx Retrofits)

Pollutant/ Avg. Prd.	Maximum Modeled Concentration, ug/m^3 At Location of SFERP Max Impact				Maximum Modeled Concentration, ug/m^3 At Location of Maximum Combined Impact				Current Background[c]	Total Cumulative Impact, All Sources, ug/m^3
	SFERP	Other Cumulative Sources[a]	POT/HP[b]	Total	SFERP	Other Cumulative Sources[a]	POT/HP[b]	Total		
NOx: 1-hr avg	8.3	0	-1.1	7.2	0	172	0	172	141	313
NOx: annual avg[e]	0.1	0.1	-0.4	-0.2	0.02	11.4	-0.1	11.3	36	47
PM_{10}: 24-hr avg	1.2	0.01	0	1.2	0	8.7	0	8.7	74	82.7
PM_{10}: annual avg	~~0.2~~ ***0.080***	~~0.01~~ ***0.005***	0	~~0.2~~ ***0.085***	~~0.02~~ ***0.01***	0.6	0	0.6	26.3	26.9

Notes:
a. SF Self Storage, SF Wave Exchange and UCSF.
b. Potrero and Hunters Point future emissions based on historical generating levels; compliance with future regulations.
c. Maximum monitored ambient concentrations at Arkansas Street, 2001-2003.
d. 1-hr avg NOx ozone-limited using concurrent ozone data for hour of maximum modeled impact.
e. Annual average NOx ozone-limited using ARM and national default factor of 0.75.

Table 8.1F-5 ***Revised 4/05***

Cumulative Air Quality Impacts: Scenario B (Potrero and Hunters Point Maximum Future Emissions)

Pollutant/ Avg. Prd.	Maximum Modeled Concentration, ug/m³ At Location of SFERP Max Impact				Maximum Modeled Concentration, ug/m³ At Location of Maximum Combined Impact				Current Background[c]	Total Cumulative Impact, All Sources, ug/m³
	SFERP	Other Cumulative Sources[a]	POT/HP[b]	Total	SFERP	Other Cumulative Sources[a]	POT/HP[b]	Total		
NOx: 1-hr avg	8.3	0	34.4	42.7	0	172	0	172	141	313
NOx: annual avg[e]	0.1	0.1	0.3	0.5	0.02	11.4	0.1	11.5	36	48
PM_{10}: 24-hr avg	1.2	0.01	1.2	2.4	0	8.7	0	8.7	74	82.7
PM_{10}: annual avg	~~0.2~~ ***0.080***	~~0.01~~ ***0.005***	~~0.2~~ ***0.01***	~~0.4~~ ***0.10***	~~0.02~~ ***0.01***	0.6	0.03	~~0.7~~ ***0.6***	26.3	~~27.0~~ ***26.9***

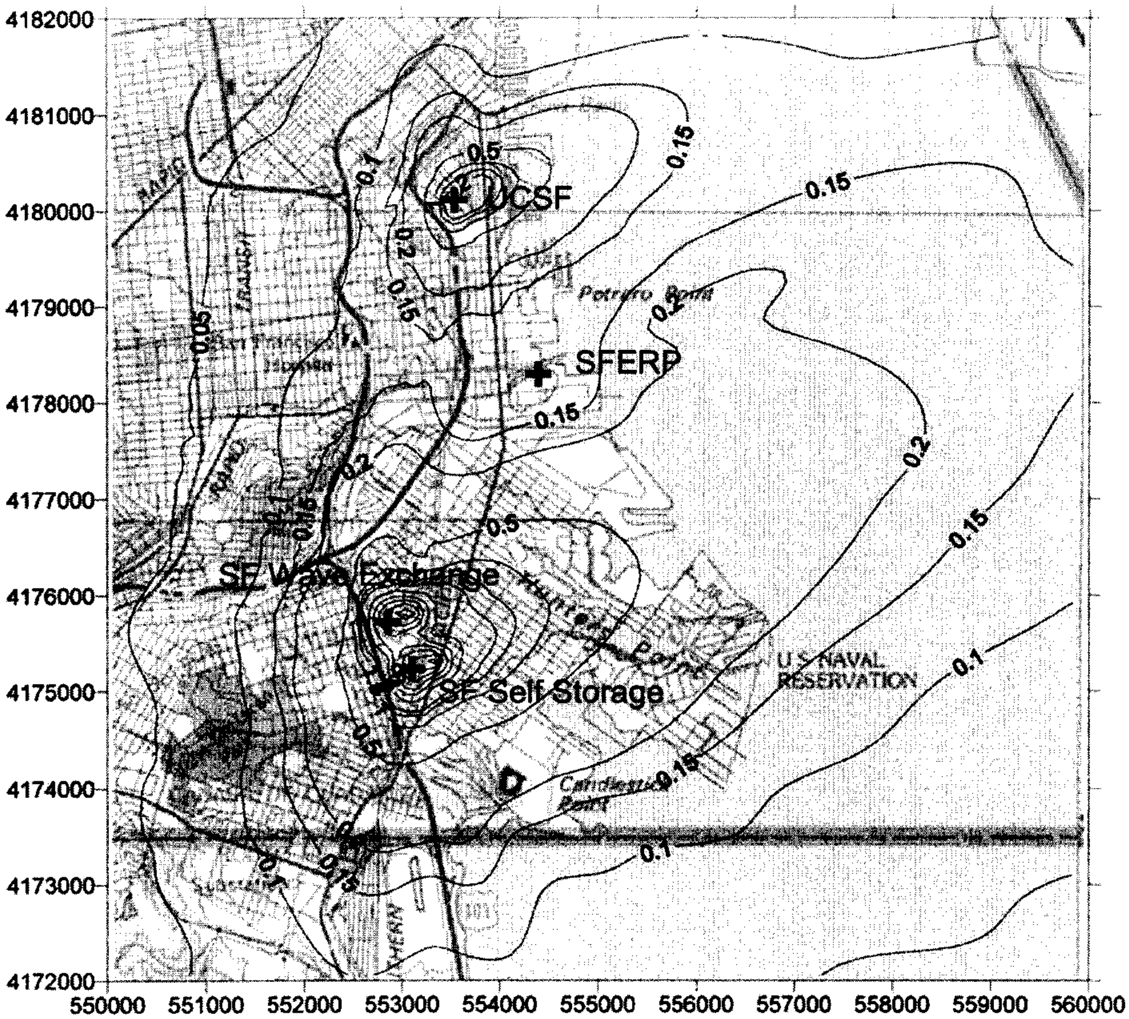
Notes:
a. SF Self Storage, SF Wave Exchange and UCSF.
b. Potrero and Hunters Point future emissions based on maximum allowable generating levels; compliance with future regulations.
c. Maximum monitored ambient concentrations at Arkansas Street, 2001-2003.
d. 1-hr avg NOx ozone-limited using concurrent ozone data for hour of maximum modeled impact.
e. Annual average NOx ozone-limited using ARM and national default factor of 0.75.

Table 8.1F-6 *Revised 4/05*
Cumulative Air Quality Impacts: Scenario C (Potrero and Hunters Point Shut Down)

Pollutant/ Avg. Prd.	Maximum Modeled Concentration, ug/m^3 At Location of SFERP Max Impact				Maximum Modeled Concentration, ug/m^3 At Location of Maximum Combined Impact				Current Background[c]	Total Cumulative Impact, All Sources, ug/m^3
	SFERP	Other Cumulative Sources[a]	POT/HP[b]	Total	SFERP	Other Cumulative Sources[a]	POT/HP[b]	Total		
NOx: 1-hr avg	8.3	0	-1.7	6.6	0	172	0	172	141	313
NOx: annual avg[e]	0.1	0.1	-0.9	-0.7	0.02	11.4	-0.2	11.2	36	47
PM_{10}: 24-hr avg	1.2	0.01	-0.9	0.3	0	8.7	0	8.7	74	82.7
PM_{10}: annual avg	~~0.2~~ ***0.080***	0.01 ***0.005***	~~-0.15~~ ***-0.008***	~~0.05~~ ***0.077***	~~0.02~~ ***0.01***	0.6	-0.02	0.6	26.3	26.9

Notes:
a. SF Self Storage, SF Wave Exchange and UCSF.
b. Potrero and Hunters Point shut down.
c. Maximum monitored ambient concentrations at Arkansas Street, 2001-2003.
d. 1-hr avg NOx ozone-limited using concurrent ozone data for hour of maximum modeled impact.
e. Annual average NOx ozone-limited using ARM and national default factor of 0.75.

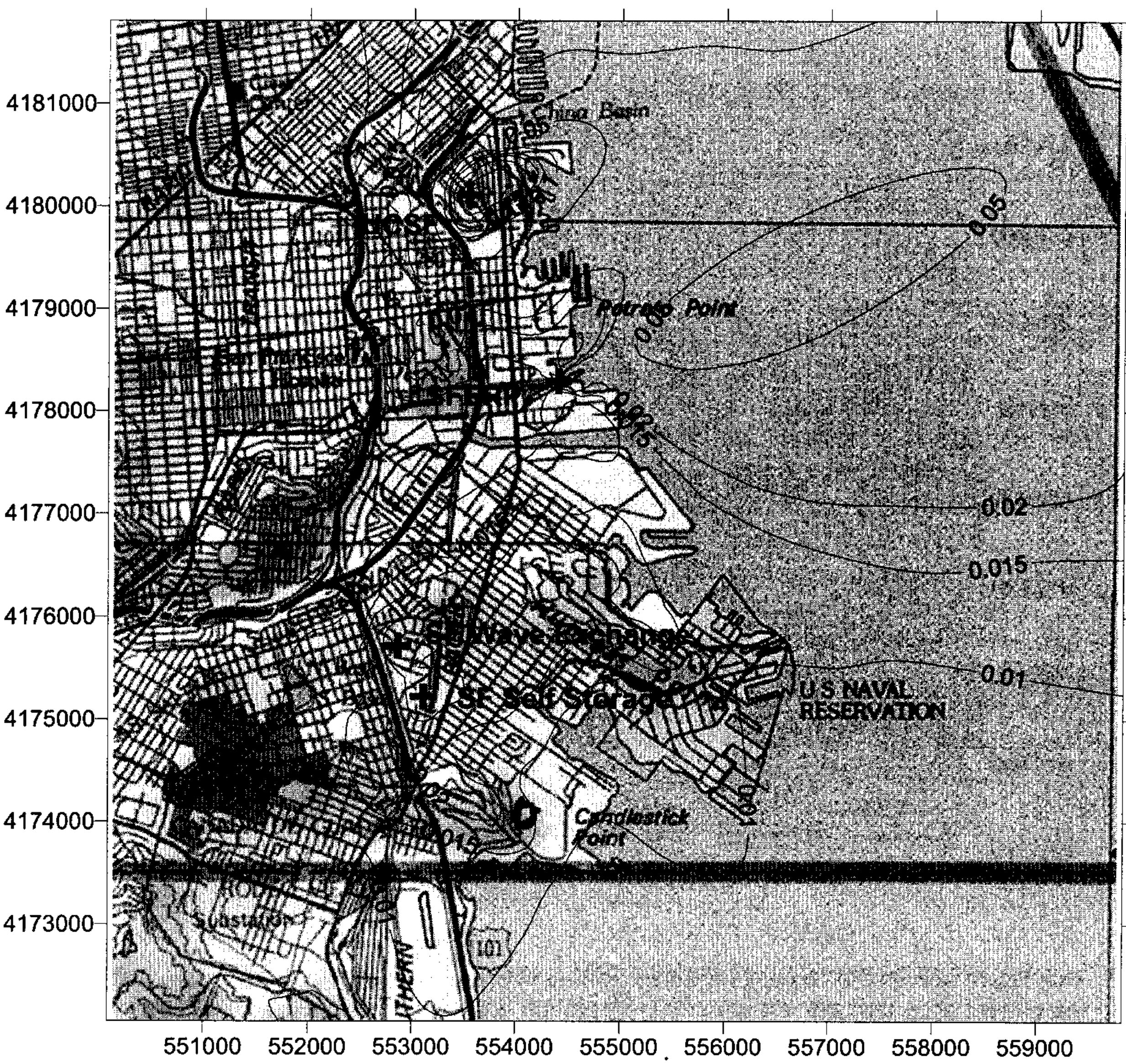
Figure F-1
San Francisco Electric Reliability Project
Cumulative Impacts for Annual Average NO_2 (µg/m³)
(Modeled concentrations shown are not ozone limited)



This figure shows the highest modeled annual average NO_2 impact from new sources in the project area that are not already in operation and therefore are not included in monitored background concentrations. The + symbols indicate the location of each modeled source.

Figure F-2 ***Revised 4/05***

San Francisco Electric Reliability Project
Cumulative Impacts for Annual Average PM_{10} ($\mu g/m^3$)



This figure shows the highest modeled annual average NO_2 impact from new sources in the project area that are not already in operation and therefore are not included in monitored background concentrations. The + symbols indicate the location of each modeled source.